

PDS Lab Test 2, Problem (b) (March 11, 2022)

Time: 1:30 hrs, Marks: 20 (Filename: rollnumber_LT2b.c)

LT2b. You have to submit a number of assignments for every subject in a semester. Your academic activity during a semester is defined by a sequence of assignments with associated deadlines and marks. Deadline of an assignment is represented by an integer counting the number of days from start of the semester. Marks is represented by a floating point number. The sequence of assignments for a subject can be represented by a link list of assignments arranged in increasing order of deadlines. The suggested structure for a node in the linked list is as follows:

```
struct node {  
    int assnid;  
    int deadline;  
    float marks;  
    struct node *next;  
};
```

Assume that deadlines of no two assignments in a semester are the same. Write the following functions:

1. Write function `struct node *make_list(int n)` to read records for n assignments and store them in a link list.
2. Write a function, `float total_marks(struct node *list)`, to return the total marks of all the assignments represented by the linked list passed as the argument.
3. Write a function:

```
struct node *combine(struct node *list1, struct node *list2)
```

to return the linked list obtained by merging the assignments for two subjects in a semester represented by *list1* and *list2* respectively. Assignments in the merged list must also be ordered by their deadlines.

- i. Write a `main()` function which reads two integers $n1$, and $n2$. And then reads the records for two subjects L1, and L2 using the *make_list* function.
- ii. For each subject L1, L2, print the list of assignment ids and their marks (one assignment in each line), followed by the total marks computed using the function, *total_marks*.
- iii. Use the function, *combine*, to merge L1 and L2 and then print the list of assignment ids and marks in the merged list (one assignment in each line), followed by the total marks computed using the function, *total_marks*.